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174, Sri Ranga Complex
Amrutha Nagar Main Road
New Bank Colony, Konanakunte
Bangalore - 560 062.
Mobile : +91 97429 59595
Tele/Fax : 080-2632 2565
E-mail : civilexpertsltd@gmail.com
URL : www.civilexperts.in

NABL ACCREDITED AS PER ISO/IEC 17025:2005

Job No: CECTC-BBMP-KRIDL-W.No.14-2015-16 16.04.2015

Aggregate Impact Value

IS: 2386 Part IV

Client	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, PIU, Bangalore.
Name of the Work	Re-Construction of roads and drain at 7th B Cross Diffence Colony connecting to Munikondappa Layout in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference	EE/DD/WO/373/2014-15 Dated: 31.03.2015
Source / Location	Hotmix Plant, Bangalore
Type of Mix	Bituminous Macadam
Date of Testing	16.04.2015

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	383	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	79	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	305	302	
4	Aggregate Impact value = percent fines	20.90	21.93	
	100* (W_2/W_1)%			21.42

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Macadam is 30%

Note:

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Job No: CECTC-BBMP-KRIDL-W.No.14-2015-16 : 16.04.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	: **Technical Manager (West),** KRIDL, PIU, Bangalore.
Name of Work	: Re-Construction of roads and drain at 7th B Cross Diffence Colony connecting to Munikondappa Layout in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference	: EE/DD/WO/373/2014-15 Dated: 31.03.2015
Technical Reference	: IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	: Bituminious Macadum
Date of Testing	: 16.04.2015

Flakiness Index = **12.12%**

Elongation Index = **13.48%**

Result : Combined Flakiness & Elongation index **25.60%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Macadam is 30%

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Job No: CECTC-BBMP-KRIDL-W.No.14-2015-16 18.04.2015

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, PIU, Bangalore.
Name of the Work	Re-Construction of roads and drain at 7th B Cross Diffence Colony connecting to Munikondappa Layout in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference	EE/DD/WO/373/2014-15 Dated: 31.03.2015
Source / Location	Hotmix Plant, Bangalore.
Type of Mix	Bituminous Macadam
Date of Testing	18.04.2015

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 2	
1	Weight of aggregate suspended in water with the basket	W_1 g	2013	2016	2018	
2	Weight of basket suspended in water	W_2 g	750	750	750	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1263	1266	1268	
4	Weight of saturated surface dry aggregate in air	W_3 g	2026	2024	2023	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	763	758	755	
6	Weight of oven dried aggregate	W_4 g	2012	2011	2009	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.637	2.653	2.661	2.649
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.686	2.699	2.711	2.699
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.70%	0.65%	0.70%	0.70%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%

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Job No: CECTC-BBMP-KRIDL-W.No.14-2015-16 18.04.2015

Aggregate Gradation Test

IS : 2386 Part I

Client	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, PIU, Bangalore.
Name of the work	Re-Construction of roads and drain at 7th B Cross Diffence Colony connecting to Munikondappa Layout in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference	EE/DD/WO/373/2014-15 Dated: 31.03.2015
Sample ID	Hotmix Plant, Bangalore.
Type of Mix	Bituminous Macadam
Date of Testing	18.04.2015

Total Weight of Sample: 5355 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	378	7.06	7.06	92.94	90-100	
13.2	1652	30.85	37.91	62.09	56-88	
4.75	1583	29.56	67.47	32.53	16-36	
2.36	1036	19.35	86.82	13.18	4-19	
0.3	246	4.59	91.41	8.59	2-10	
0.075	123	2.30	93.71	6.29	0-8	

Total Weight of Sample: 5495 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	452	8.23	8.23	91.77	90-100	
13.2	1563	28.44	36.67	63.33	56-88	
4.75	1852	33.70	70.37	29.63	16-36	
2.36	981	17.85	88.23	11.77	4-19	
0.3	263	4.79	93.01	6.99	2-10	
0.075	92	1.67	94.69	5.31	0-8	

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Job No.: CECTC-BBMP-KRIDL-W.No.14-2015-16 18.04.2015

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX
AASHTO T 164 & AASHTO T 30

CLIENT	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, PIU, Bangalore.
NAME OF WORK	Re-Construction of roads and drain at 7th B Cross Diffence Colony connecting to Munikondappa Layout in Ward No. 14, Bagalagunte, BBMP, Bangalore.
REFERENCE	EE/DD/WO/373/2014-15 Dated: 31.03.2015
DATE OF TESTING	18.04.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	483.5	483
3. Weight of Asphalt and Mineral matter	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	16.5	17.00
7. Bitumen content in %	3.30	3.40
8. Average	**3.35**	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Trail 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	35.2	7.28	7.28	92.72	90-100
13.2	165.8	34.29	41.57	58.43	56-88
4.75	151.4	31.31	72.89	27.11	16-36
2.36	56.8	11.75	84.63	15.37	4-19
0.3	39.6	8.19	92.82	7.18	2-10
0.075	8.7	1.80	94.62	5.38	0-8

SIEVE SIZE	Trail 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	32.4	6.48	6.48	93.52	90-100
13.2	158.7	31.74	38.22	61.78	56-88
4.75	175.6	35.12	73.34	26.66	16-36
2.36	63.1	12.62	85.96	14.04	4-19
0.3	33.5	6.70	92.66	7.34	2-10
0.075	11.2	2.24	94.90	5.10	0-8

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